Twenty Years Later: A Follow-up
Of The Officer Evaluation Center

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Abstract

After about 20 years, a follow-up was done of the Officer Evaluation Center (OEC), where 900 first and second lieutenants underwent 3 days of assessment of their technical, administrative and combat skills. From 15 exercises, over 2000 measures were taken of each officer. These observations were reduced through factor and other analyses to 341 variables which yielded 8 cross-situational factors.

During the current follow-up, the ability of 25 remaining summary variables to discriminate between the group of officers who left the Army after their initial 2-year commitment and the group remaining for a full career term was tested. A second discriminant analysis was performed among those who left active duty after 2 years. These were grouped according to rank (1st Lieutenant or Captain) at the time of completing their reserve commitments.

Both analyses yielded significant discriminant functions. In the former (active vs. discharged) analysis 65.38% of cases were correctly classified and in the latter 67.87%.

Background

In the late 1950's and early 1960's research was conducted by the U.S. Army Personnel Research Office to develop means of identifying officers with the aptitudes and characteristics to successfully meet the demands of different types of command responsibility. In essence, the research program centered around the development of the Differential Officer Battery (DOB). This battery included measures of information ranging from military tactics to the physical sciences, sports and the arts. Biographical reports and self-descriptive statements of interests and attitudes were also included. In the process of development and refinement, the battery was administered to 6500 active duty officers in 1958 and 1959 and about 4000 in 1961 and 1962 (Helme, Willemin and Grafton, 1971).

Suitable criterion measures were needed to validate this instrument. Ratings by peers and superiors were used as part of the validation effort. However, these were not totally satisfactory in that the DOB had been designed to differentially assess potential for combat, technical and administrative assignments. An officer's job rating was relevant only to his current assignment which could be representative of only one of the three categories.

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It was decided that a series of situational tests would be administered to serve as additional validation criteria. These would allow assessment of each officer in each of the three areas and provide the added advantage of uniformity of tasks and standardization of observations.

For the purpose of administration of these situational tests, the Officer Evaluation Center (OEC) was established at Fort McClellan, Alabama on 1 March 1962. The first year of the center's operation was spent staffing, training assessors and finalizing procedures. The first officers who had taken the DOB were not tested until February of 1963. Final revisions were made based on this "shakedown" sample and for-the-record testing began in June of 1963.

In the process of refinement, all OEC exercises had been worked into a central scenario. This framework was that of a simulated Military Assistance Advisory Group (MAAG) Headquarters. New assessees were told to assume that they were "reporting for duty" at this MAAG Headquarters located in a friendly host nation. All tests then became a succession of assignments to be performed while temporarily awaiting reassignment to a field unit (Willemin, 1964).

Exercises were selected to provide reliable although not necessarily complete coverage of the technical, administrative and combat areas. All exercises had to meet certain conditions. They were required to be able to be performed without specialized training and experience, to be recognizable as representative military requirements, and to have militarily meaningful outcomes characteristic of good or poor performance.

Exercises were drafted with the assistance of subject-matter experts, field tested and then technically reviewed at the appropriate branch schools. They were designed to include measures of the following categories of behaviors: perceiving situational elements, judging future developments, analyzing problem elements, planning future action, organizing resources, deciding the course of immediate action, taking the initiative to act, communicating orders and information, training and directing subordinates, and persisting under stress (Willemin, 1964).

Each exercise was to be primarily representative of one of the three areas of interest. There were five exercises developed in each of the three areas. A summary of these is given as follows:

Combat Exercises:

1. March Order. Examinee plans a tactical road march and reacts to interruptions by senior and subordinate personnel.

2. Observation Post. Examinee directs fire onto visible targets. He must perceive terrain, enemy activity and targets; estimate range and communicate this information.

3. Security Mission. Examinee must anticipate enemy actions, quickly plan offensive and defensive actions and direct subordinates through face-to-face contact.

4. Roadblock. Examinee must apply basic tactical principles and communicate important information to others.

5. Route Reconnaissance Patrol. Examinee must cope with persistent obstructions to mission progress, respond to critical situational factors and withstand psychological stress under simulated prisoner-of-war conditions.

Technical Exercises:

1. Communications Exhibit. Examinee trouble shoots technical equipment and must use subordinates as effectively as possible.

2. Automotive Inspection. Examinee detects equipment deficiencies and recommends and/or performs corrective actions.

3. Road Damage and Radiation Survey. Examinee must organize teams, train subordinates, collect and communicate information and make plans under conditions of time pressure, obstacles, harassment and fatigue.

4. Airfield Layout. Examinee must use technical information to select an airfield site and compute the necessary length of a runway.

5. Weapons Assessment. Examinee reports on the characteristics of an enemy weapon from a technical intelligence point of view.

Administrative Exercises:

1. Improper Supply Records. Examinee analyzes supply records, writes a summary memorandum and (tactfully) communicates discrepancies .

2. Office Management. Examinee must organize administrative tasks and correct improper office procedures.

3. Production Analysis. Examinee analyzes production data, organizes unit for efficient operation, and communicates plans.

4. Site Selection. Examinee must use logistical judgment to interpret information and consider factors in site selection.

5. Highway Traffic Plan. Examinee must plan logistical support for a large scale tactical operation and respond to rapid political and military changes.

Each officer went through the exercises as an individual. The entire set required 3 days to administer. The combat setting was made as realistic as possible with 17 officers and 41 enlisted personnel playing the roles of United States, allied and enlisted personnel. The first day's exercises were carried out under time pressure but "peacetime" conditions. On the second day the examinee was awakened at 0230 after about four hours sleep

and told that the host nation was at war. The remainder of the exercises were carried out under "emergency" conditions and increasing fatigue on the part of the examinee (Helme, Willemin and Grafton, 1971).

Method

Sample

The original sample of OEC participants was drawn from the pool of 4000 lieutenants who took the DOB between 1961 and 1964. Of these, about 900 attended the OEC after one or two years of active duty. Both first and second lieutenants were included as were graduates of the U.S. Military Academy and both Reserve and Regular Army graduates of Reserve Officer Training Corps (ROTC). The lieutenants represented 10 different combat arms, combat support and combat service support branches. Only about 737 of the original 900 participants are included in the data base. The remaining officers were members of the first thirty-odd groups used as a "shakedown sample" to refine measures and exercises (Helme, Willemin and Grafton, 1971).

The first step of the current research was to determine where these 737 men were in relation to their military careers and what data were available to indicate whether their performances at the OEC bore any relationship to their later degrees of military success.

Through the Army's locator service, we were able to find the names of 101 OEC participant officers still on active duty. At the time of follow-up sampling (1980) these included 1 Colonel, 86 Lieutenant Colonels, 11 Majors and 3 whose current ranks were indeterminate from information provided. The names of 412 additional OEC participants were found through computer search at the National Personnel Records Center (NPRC) in St. Louis, Missouri. The location of their records at NPRC indicated that these men had been discharged from all active and/or reserve military commitments.

The military history of the remaining 224 participants may be considered unknown. However, there is a third major repository of military records which is the Reserve Component Personnel and Administrative Center (RCPAC) in St. Louis, Missouri. This center houses records of individuals involved with Reserve Component (National Guard, etc.) units. It is not unlikely that many of the remaining OEC records could be found there, but we have as yet not been able to make suitable arrangement to obtain information from this center.

Information Gathered

It was quickly determined that a limited amount of information would be available for the "discharged" subsample located at NPRC. A much greater variety of information is available for the subsample of officers still on active duty which would necessitate a much more thorough process of development for a "criterion-of-success" score. Therefore, it was decided to obtain available information on the "discharged" group as a first step.

We found only certain useful forms to be contained as a rule in the majority of NPRC folders. These were:

Form DD 214--Report of Transfer or Discharge
Form USAAC 872--Discharge
Form 67-5, 67-6--US Army Officer Evaluation Report

Only those items were taken from these forms which might reasonably be considered indicative of military success. These were: 1) Number of years of active military service; 2) rank at the time of discharge from active duty; 3) rank at the time of discharge from the reserve component; 4) reason for discharge from the reserve component; 5) Officer Evaluation Report totals.

OEC Summary Variables

During the conduct of the assessment center more than 2000 observations and judgments were recorded on each assessee. These consisted of checklists of specific behaviors, scale ratings and quantitative summations of written products. Initially these items were analyzed by factor analyses conducted separately for each exercise. Intercorrelation and factor analysis of these scores yielded 342 scales or variables.

The number of variables was then reduced to 256 by elimination of those which were linear combinations of less complex ones and those on which 90% or more of the participants scored alike. Further factor analysis resulted in the identification of a set of 30 factors, all but two of which were specific to a single task.

To find cross task factors, "marker" variables were chosen for each factor. These were then combined with additional independent scales, refactored and rotated. A set of eight factors was identified and analysis using these 8 factors was then extended to the remaining variables (Helme, Willemin and Grafton, 1971).

Information remaining from the original set of OEC data consists of 25 summary variables. These scores represent 7 of the original 15 exercises (3 from administrative exercises and 2 each from the combat and technical areas). These summary scales were part of the 342 variables derived in the initial set of analyses. About half are shown as loading on the final 8 cross-situational factors derived from analyses. Few (about 5) are seen as markers or variables loading on the intermediate set of 30 variables. It is likely that many of them were omitted from this stage of analysis because they were linear combinations of simpler variables. A summary description of the variables is provided at Table 1.

Measures of leader characteristics resulting from Differential Officer Battery (DOB) development were correlated with OEC variables and factor scores. A number of significant correlations were found and differential prediction of the combat and technical-managerial leadership domains was shown (Helme, Willemin and Grafton, 1974).

TABLE I

SUMMARY DESCRIPTION OF REMAINING OEC VARIABLES

Area	Exercise	Variable	Loads on Cross-Task Factor
Administrative	Highway Traffic Plan	Factor Total	8-Technical Skills
		Attention to Data Requirements	1-Technical Managerial Leadership
	Office Management	Sequencing of Operations Retained Procedures	A
	Site Selection	Factor Total	
Technical	Automotive Inspection	Factor Total	8-Technical Skills
		Identifying Information	5-Mission Persistence
	Airfield Layout	Sites Weighted Scale	
		Basic Geographical Considerations	
		Operational Hazards	B
		Engineering Considerations	
		Computational Accuracy	C
		Utilization of Terrain Features	
		Number of Sites Evaluated	7-Tactical Skills
		Thoroughness of Runway Report	
		Total Score	7-Tactical Skills
Combat	Security Mission	Firm Handling of Personnel	
		Effectiveness of Defense Plan	
		Total Score	2-Combat Leadership
	Roadblock	Attitude & Motivation	
		Tactical Control	
		Instruction of Men	3-Team Leadership
		Handling of Sniper	
		Confidence & Forcefulness	2-Combat Leadership
		Effectiveness in Establishing Abatis	3-Team Leadership

A Marker for intermediate factor   30-Commo & Staff

B Independent variable

C Marker for intermediate factor   23-Mission Accomplishment

Results and Discussion

It was determined that the best use of the existing data would be to determine how effectively the OEC variables could discriminate between the group of participants who chose to get out of the Army after their initial obligation and the group who decided to remain for a full career term. The decision(s) to remain in the Army is the fundamental criterion of a successful military career. It is the summary outcome of all the skills, motivations, experienced successes, etc. which allow one to choose and successfully complete a given life's work. Any set of variables potentially able to detect fine differences in level of success such as one-time ratings or awards should also be able to detect differences in this basic yet overriding criterion.

The group of 101 career officers for the analysis was self-defined. However, the discharged group required some further definition. Of 412 cases available, we were actually able to get data on 352. Of these by far the majority (237) fit the pattern of minimal 2 year active duty commitment and completion of the remainder of their obligation in some type of a reserve unit. (As previously mentioned, we have not been able to obtain data on any-one who may still be maintaining his reserve status.)

It was decided to use the homogeneous sample of 237 for the second group. An informal perusal of the records indicated that those having more or less than two years of active duty represented a much more ill-defined group. These included: officers killed in Vietnam, West Point Graduates leaving after their minimal 5-year commitment, medical discharges and a variety of unique cases.

A stepwise discriminant analysis was performed using the "2-year" and "20-year" career groups described and a significant discriminant function was found. The value of Wilks' lambda was .89 with a corresponding chi-square of 35.54 (d.f. = 7; $p < .001$). The canonical correlation was .318. However, neither of these statistics indicates a very high degree of separation between the groups.

Standardized function coefficients are shown at Table 2 for the 7 variables of the total 25 included in the function. These show the relative contributions of each variable to the function. By looking back to Table 1, one can determine the factors from the original analysis on which these variables loaded. It is interesting to note that while only 10 of the 25 Summary variables were reported as loading on the final factors of the original analysis, 5 of the 7 appearing in the current analysis came from these 10.

The cross-comparison also helps to lend interpretation to the function. To the extent that these variables are indicative of the original factors of combat and team leadership, tactical skills and mission persistence, the military career-ists appear to be distinguished from the other group along a general "military leadership" dimension.

TABLE 2

Standardized Discriminant Function Coefficients and Group Means

First Discriminant Analysis (2 vs. 20 years)

Variable	Standardized Coefficient	Group Means 20-yr.Active	2-yr.Active
Airfield Layout–No. of sites evaluated [1a – 2]	-.50	5.06	5.24
Automotive Inspect–Factor Total [1b – 2]	.24	9.34	8.16
Roadblock–Confidence & Forcefulness [1c]	.80	28.61	25.03
Security Mission–Total Score	.44	297.71	254.11
Airfield Layout–Comput. Accuracy	-.30	.55	.64
Roadblock–Instruction of Men [1d]	-.34	10.71	9.89
Site Selection–Factor Total	.23	10.12	9.35

Second Discriminant Analysis (Discharged as 1LT vs. CPT)

Variable	Standardized Coefficient	Group Means Captain	1st Lieutenant
Airfield Layout–No. of sites evaluated [1a – 2]	-.38	5.18	5.33
Automotive Inspection–Factor Total [1b – 2]	.53	9.25	7.53
Roadblock–Attitude & Motivation	.57	29.48	27.20
Roadblock–Handling of Sniper	-.32	4.82	5.26
Roadblock–Tactical Control	-.38	3.12	3.34
Highway Traffic Plan–Attn. to Data [1e]	-.29	3.88	4.23
Airfield Layout–Util. Requirements of Terrain Features	.40	1.67	1.45

[1] These variables loaded on factors in the original analyses: a) Tactical Skills; b) Mission Persistence; c) Combat Leadership; d) Team leadership; e) Technical-Managerial Leadership.

[2] These variables included in both discriminant functions.

Following determination of the discriminant function, its ability to correctly classify cases was examined. Assuming the prior probability of group membership to be at the chance (50%-50%) level, 65.38% of cases were correctly classified using the discriminant function. This represents a 30.76% improvement over chance. Classification results are shown below:

Actual Career Group	Predicted Career Group	
	20-year	2-year
20-year	68 (67.3%)	33 (32.7%)
2-year	84 (35.4%)	153 (64.6%)

Lack of information and the considerable time span involved make it difficult to discuss those considerations that normally go with classification. For example, the large difference in group sizes would suggest improvement in overall classification through the use of prior probabilities of group membership other than chance. However, the most appropriate percentages to use were not readily available to us. They would be the statistical projections of officer retention of twenty years ago.

Those factors affecting tolerance for misclassification have also changed. The Selective Service System was still in effect in the early 1960's. Under that system the loss of a potentially successful officer through misclassification might have been much less costly than it is today.

Following the initial analysis, the 2-year sample of officers deciding not to remain in the Army was examined. This sample revealed a bimodal distribution along the dimension of rank at the time of discharge from the reserves. Of the 222 officers for whom records were available, 84 were discharged as Captains and 137 as First Lieutenants.

Assuming this to be an indicator of military success, a second stepwise discriminant analyses was performed using groups formed on the basis of rank at the time of reserve discharge. A significant discriminant function was found with Wilks' lambda = .90, chi-square = 21.58, d.f. = 7, p = .003 (canonical correlation = .308).

The accuracy of classification was checked and 67.87% of cases were correctly classified for an improvement of 35.74 % over chance. Classification results are shown below.

Actual Rank at Discharge	Predicted Rank at Discharge	
	1LT	CPT
1LT	93 (67.9%)	44 (32.1%)
CPT	27 (32.1%)	57 (67.9%)

Standardized discriminant function coefficients shown at Table 2 indicate the relative contributions of variables to the function. As with the first analysis, exactly 7 of the 25 variables are included in the function. However, except for the two variables marked, sets of variables belonging to the two separate analyses do not overlap. Also the variables in the latter analysis tend not to be the ones which loaded on factors in the original analysis. (The exceptions are the two overlapping variables mentioned and the "highway" variable.)

This would suggest that the dimension(s) separating the career-bound young officer from the one who will leave for civilian life may not be entirely the same as those determining success as a young officer. One obvious difference might be the factor of motivation. Many of these officers may have been bright and capable, yet only interested in fulfilling their minimal military obligation. However, discussion at this point would be speculative rather than truly data-based.

In conclusion, it appears somewhat remarkable that OEC measures given so early after entry into the Army were able to measure something of what distinguishes a future career officer from a non-careerist. Given a few more years we will be able to determine how well these variables can discriminate among the successful and the "super-successful," i.e., those officers who become colonels and generals rather than retiring as lieutenant colonels. Perhaps the best is yet to come.

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